

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (currently amended) A method of preventing data loss in a magnetic disk device where a magnetic head writes data on concentric tracks on a surface of a magnetic disk, the tracks including a first plurality of first-parity-numbered tracks and a second plurality of second-parity-numbered tracks interleaved with the first plurality of first-parity-numbered tracks, the method comprising:

maintaining a first set of one or more first-parity-track counters and a second set of second-parity-track counters regarding write operations on first-parity-numbered tracks and second-parity-numbered tracks; and

in response to a command to write data to a given first-parity-numbered track, determining, based at least in part on values of counters in the first and second sets, whether a criterion is met; if only if the criterion is met, reading data from a second-parity-numbered track and updating a counter in the first set in a manner that in at least some instances depends on whether the criterion is met.

2. (original) The method of claim 1 wherein:

the first and second pluralities of tracks are located in a disk area and constitute a fraction of a total number of tracks on the surface of the magnetic disk;

the method further comprises maintaining respective first and second additional sets of counters used to prevent data loss in an additional plurality of first-parity-numbered tracks interleaved with an additional plurality of second-parity-numbered tracks located in a different disk area.

3. (original) The method of claim 1 wherein:

the first and second sets of counters each contain a single counter;

the criterion is that the counter in the second set is non-zero, and the counter in the first set has reached a threshold.

4. (original) The method of claim 1 wherein:

the criterion is that at least one second-parity-numbered track have been written, and the number of writes to first-parity-numbered tracks has reached a threshold.

5. (original) The method of claim 1, and further comprising:

if data is read from a second-parity-numbered track, determining a number of retries necessary for reading the data; and

if the number of retries reaches a threshold, writing the data read from one or more second-parity-numbered tracks to one or more second-parity-numbered tracks.

6. (original) The method of claim 5 wherein, if data is written to second-

parity-numbered tracks, updating a counter in the first set includes setting the counter to a value signifying a single write to a first-parity-numbered track.

7. (original) A method of preventing data loss in a magnetic disk device

where a magnetic head writes data on concentric tracks on a surface of a magnetic disk, the tracks including a plurality of first-parity-numbered tracks interleaved with a plurality of second-parity-numbered tracks, the method comprising:

storing tracking information regarding writes to first-parity-numbered tracks and second-parity-numbered tracks;

in response to a command to write data to a given first-parity-numbered track, determining whether a criterion specifying risk to data on a second-parity-numbered track is met; and

if the criterion is met, reading data from one or more second-parity-numbered tracks, and storing the data, so read.

8. (original) The method of claim 7, and further comprising:

determining a number of retries required for reading the data from second-parity-numbered tracks; and

if the number of retries reaches a threshold, writing the stored data read from the second-parity-numbered tracks to the second-parity-numbered tracks.

9. (currently amended) A magnetic disk device comprising:
a magnetic disk for having a surface;
a magnetic head for writing or reading the data on or from said surface of said magnetic disk; [[and]]

a write and read circuit, connected to said magnetic head, for causing said head to write or read data; the data being written on concentric tracks on said surface of said magnetic disk, said tracks including a first plurality of first-parity-numbered tracks and a second plurality of second-parity-numbered tracks interleaved with the first plurality of first-parity-numbered tracks;

a first set of one or more first-parity-track counters;
a second set of one or more second-parity-track counters; and
control circuitry that accesses and updates said first and second sets of counters, said control circuitry being configured to respond to a command to write data to a given first-parity-numbered track by determining, based at least in part on values of counters in said first and second sets, whether a criterion is met;[[,]] only if the criterion is met, reading data from a second-parity-numbered track;[[,]] and updating a counter in said first set in a manner that in at least some instances depends on whether the criterion is met.

10. (currently amended) The magnetic disk device of claim 9 wherein:
the first and second pluralities of tracks are located in a disk area and constitute a fraction of a total number of tracks on said surface of said magnetic disk;
the magnetic disk further comprises an additional plurality of first-parity-numbered tracks and an additional plurality of second-parity-numbered tracks interleaved with the first plurality of first-parity-numbered tracks, said additional pluralities of tracks being located in a different disk area;

the magnetic disk device further comprises first and second additional sets of counters; and

said control circuitry further accesses and updates said additional first and second sets of counters, and is configured to respond to a command to write data to a given first-parity-numbered track in the different disk area by determining, based at least in part on values of counters in said first and second additional sets, whether a criterion is met; only if the criterion is met, reading data from a second-parity-numbered track in said different disk area; and updating a counter in said first additional set in a manner that in at least some instances depends on whether the criterion is met.

11. (original) A magnetic disk device comprising:

a magnetic disk for recording data;

a magnetic head for writing or reading the data on or from the magnetic disk;

and

a write and read circuit, connected to the magnetic head, for writing or reading the data;

wherein the data is written or read to or from a plurality of tracks in the form of concentric circles disposed on the magnetic disk; and

wherein the number of writes of data on a given track is acquired and it is detected that the number of writes reaches a predetermined number, and based on the detection, data on tracks adjacent to the given track is read out once and, then, the read-out data is rewritten to the adjacent tracks.

12. (currently amended) A magnetic disk device comprising:

a magnetic disk for recording data;

a magnetic head for writing or reading the data on or from the magnetic disk;

and

a write and read circuit, connected to the magnetic head, for writing or reading the data;

wherein the data is written or read to or from a plurality of tracks in the form of concentric circles disposed on the magnetic disk; and

wherein all tracks on the magnetic disk are divided into a plurality of areas,
wherein the number of writes of data on even-numbered physical tracks in the divided areas is acquired and it is detected that the number of writes reaches a predetermined number, and

wherein based on the detection, data on odd-numbered physical tracks in the divided areas is read out once and, then, the read-out data is rewritten on the odd-numbered tracks.

13. (currently amended) A magnetic disk device comprising:
a magnetic disk for recording data;
a magnetic head for writing or reading the data on or from the magnetic disk;
and
a write and read circuit, connected to the magnetic head, for writing or reading the data;

wherein the data is written or read to or from a plurality of tracks in the form of concentric circles disposed on the magnetic disk; and

wherein all tracks on the magnetic disk are divided into a plurality of areas,
wherein the number of writes of data on odd-numbered physical tracks in the divided areas is acquired and it is detected that the number of writes reaches a predetermined number, and

wherein based on the detection, data on even-numbered physical tracks in the divided areas is read out once and, then, the read-out data is rewritten on the even-numbered tracks.

14. (original) A magnetic disk device according to claim 12, wherein, when the read-out data is rewritten on the odd-numbered tracks, the number of writes on the even-numbered physical tracks is cleared.

15. (original) The magnetic disk device of claim 13, wherein, when the read-out data is rewritten on the even-numbered tracks, the number of writes on the odd-numbered physical tracks is cleared.

16. (original) The magnetic disk device of any one of claims 11, 12, 13, 14, or 15 wherein, when data is written on the tracks, the data is written on alternate physical tracks and every other track is skipped and, after the data is written on half of all the tracks, the data is written on the skipped tracks.

17. (original) The magnetic disk device of claim 11 wherein, when it is detected that the number of writes reaches the predetermined number, the data to be rewritten is read and, then, if the number of retry for the data reaches a predetermined value, the data is rewritten.

18. (original) The magnetic disk device of claim 12 wherein, when it is detected that the number of writes reaches the predetermined number, the data to be rewritten is read and, then, if the number of retry for the data reaches a predetermined value, the data is rewritten.

19. (original) The magnetic disk device of claim 13 wherein, when it is detected that the number of writes reaches the predetermined number, the data to be rewritten is read and, then, if the number of retry for the data reaches a predetermined value, the data is rewritten.

20. (original) The magnetic disk device of claim 14 wherein, when it is detected that the number of writes reaches the predetermined number, the data to be rewritten is read and, then, if the number of retry for the data reaches a predetermined value, the data is rewritten.

21. (original) The magnetic disk device of claim 15 wherein, when it is detected that the number of writes reaches the predetermined number, the data to be rewritten is read and, then, if the number of retry for the data reaches a predetermined value, the data is rewritten.

22. (original) The magnetic disk device of claim 16 wherein, when it is detected that the number of writes reaches the predetermined number, the data to be rewritten is read and, then, if the number of retry for the data reaches a predetermined value, the data is rewritten.